

Amendment to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended): A cache storage system connected to a plurality of clients and at least one storage device through a network, comprising:

a controller including a lock management table containing lock status, whether a lock is required or not, and an address correspondence table for indicating correspondence of areas in said cache storage system with areas in said at least one storage device,

wherein said lock management table at least contains indices for identifying areas of said device in said cache storage system, flags for indicating said lock status of areas of said device in said cache storage system, and flags for indicating said lock status of areas in said at least one storage device corresponding to said areas of said device in said cache storage system; and

a device storing data;
wherein requests for accessing to write data from said clients may compete with each other, and wherein said controller controls said device to temporarily store block data which are exchanged between a client and said at least one storage device through said network and which designate a logical address on a storage medium and a data length;

wherein said controller, upon receiving from said client a first lock request for an area of said at least one storage device, ~~checks the lock status of said area indicated in said address correspondence table and sends first status information of either conflict or good to said client;~~

~~wherein said controller, after sending said first status information of good to said client, issues a second lock request to said at least one storage device to lock an area of said at least one storage device, and after receiving either status information of good or status information of reservation conflict from said at least one storage device, issues a second first command of lock OK to said client in order to receive a first command of lock Acknowledge from said client, and upon receiving said first command of lock Acknowledge from said client, sends a second command of lock Acknowledge to said at least one storage device to update the contents of said lock management table of said at least one storage device to indicate lock ON for said area of said at least one storage device~~ so that deadlock can be avoided when a first lock request is received from another client on the basis of contents of said a lock management table of said at least one storage device;

~~wherein said controller updates the contents of said lock management table to indicate first lock ON for said area of said device and processes, after receiving said first command of lock Acknowledge and thereafter a first I/O request from said client, device, data under said first I/O request and thereafter issues a first I/O response to said client and issues a second I/O request for sending data received from said client to said at least one storage device until said controller receives a first unlock request release command from said client;~~

wherein said controller, upon receiving said first unlock request from said client, issues a second unlock request to said at least one storage device to unlock the area of said at least one storage device; and

wherein said controller, upon reception of a second command of unlock OK from said at least one storage device, sends a second command of unlock Acknowledge to said at least one storage device to unlock said area of said at least one storage device.

~~wherein said controller, in response to said first release command, unlocks said area by updating said lock management table thereby to indicate first lock OFF for said area of said device, and takeovers processing to a channel control processor to control an I/O path connected to said storage device;~~

~~wherein said controller issues a second lock request to said at least one storage device to lock an area of said at least one storage device, and after receiving either second status information of good or second status information of reservation conflict from said at least one storage device, and upon reception of a second command of lock OK, sends a second command of lock acknowledge to said at least one storage device, and thereafter updates the contents of said lock management table to indicate second lock ON for said area of said at least one storage device, so that deadlock can be avoided when a second lock request is received from another cache storage device or client;~~

~~wherein said controller issues a second I/O request concerning updating of said data to said at least one storage device until said controller issues a second~~

~~unlock request to said at least one storage device to unlock the area of said at least one storage device; and~~

~~wherein said controller, upon reception of a second command of unlock OK from said at least one storage device, sends a second command of unlock Acknowledge to said at least one storage device to unlock said area of said at least one storage device.~~

2. – 12. (canceled).

13. (previously presented): A cache storage system according to claim 1, wherein said controller issues, upon reception of no response to said second I/O request issued to said at least one storage device therefrom, said second I/O request to said at least one storage device corresponding to said area of said device in said cache storage system to write contents of said area of said device in said cache storage system.

14. (previously presented): A cache storage system according to claim 13, wherein said controller encrypts data when said controller sends said data to said at least one storage device.

15. (previously presented): A cache storage system according to claim 1, wherein upon reception of a first read request from said client, said controller sends data to said client when said data is present on said cache storage system, and

requests said at least one storage device to send data and sends said data given from said at least one storage device to said client when said data is absent on said cache storage system.

16. (canceled).